

## Glossary of Terms

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**Note:** The following glossary was compiled from various documents used within the Department of Energy. Where shown, the number in parentheses indicates the associated reference document (see page A-15).



### Acceptance

The decision that an item, process, or service conforms to specified characteristics defined in codes, standards, or other requirement documents. (3)

### Accountability

Responsibility for an activity, accompanied by rewards and recognition for good performance, and adverse consequences for performance that is unreasonably poor. (2)

### Activity

Actions taken by a program or an organization to achieve its objectives. (2)

### Assessment

An all-inclusive term used to denote the act of determining, through a review of objective evidence and witnessing the performance of activities, whether items, processes, or services meet specified requirements. Assessments are conducted through implementation of the following actions: audits, performance evaluations, management system reviews, peer reviews, or surveillances, which are planned and documented by trained and qualified personnel. (5)

### Assessment/Verification

The act of reviewing, inspecting, testing, checking, conducting surveillances, auditing, or otherwise determining and documenting whether items, processes, or services meet specified requirements. DOE Order 5700.6C uses the terms assessment and verification synonymously. This order defines these terms by who is performing the work; assessments are performed by or for senior management, and verifications are performed by the line organization. (9)

# A

#### Audit

A planned and documented activity performed to determine by investigation, examination, or evaluation of objective evidence the adequacy of and compliance with established procedures, instructions, drawings, and other applicable documents and the effectiveness of implementation. Audit should not be confused with surveillances or inspection activities performed for the sole purpose of process control or product acceptance. (3)

Also, a systematic check to determine the quality of operation of some function or activity. Audits may be of two basic types: (1) performance audits in which quantitative data are independently obtained for comparison with routinely obtained data in a measurement system, or (2) system audits of a qualitative nature that consist of an on-site review of a laboratory's quality system and physical facilities for sampling, calibration, and measurement. (5)

# B

#### Baseline

The current level of performance at which an organization, process, or function is operating. (2)

#### Benchmarking

To measure an organization's products or services against the best existing products or services of the same type; the benchmark defines the 100 percent mark on the measurement scale. (2)

Also, the process of comparing and measuring an organization's own performance on a particular process against the performance of organizations judged to be the best of a comparable industry. (3)

#### Bottom Up

Starting with input from the people who actually do the work and consolidating that input through successively higher levels of management. (2)

#### **C-Chart**

Also referred to as “count” charts, these are used in dealing with counts of a given event over consecutive periods of time. Many of the initial DOE performance indicators involve counts of events for consecutive calendar year quarters, making c-chart analysis of these indicators appropriate. (1)

#### **Cascaded Down**

Starting with a top level of management, communicated to successively lower levels of management and employees.

#### **Characteristics**

Any property or attribute of an item, process, or service that is distinct, describable, and measurable.

#### **Common Causes of Variation**

Indicated by statistical techniques, but the causes themselves need more detailed analysis to be fully identified. Common causes of variation are usually the responsibility of management to correct, although other people directly connected with the process sometimes are in a better position to identify the causes and pass them on to management for correction. (1)

#### **Continuous Improvement**

The undying betterment of a process based on constant measurement and analysis of results produced by the process and use of that analysis to modify the process. (2)

Also, where performance gains achieved are maintained and early identification of deteriorating environmental, safety, and health conditions is accomplished. (1)

#### **Control Charts**

The two main uses for these charts are to monitor whether the system is stable and under control (to warn of changes), and to substantiate results from changes introduced into the system (to confirm positive results). (1)

# C

#### **Control Lines/Limits**

The “limit lines” drawn on charts to provide guides for evaluation of performance indicate the dispersion of data on a statistical basis and indicate if an abnormal situation (e.g., the process is not in control or special causes are adversely influencing a process in control) has occurred. (1)

Also, two control limits are the statistical mean (average) plus three times the standard deviation and the statistical mean minus three times the standard deviation. (5)

#### **Corrective Action**

Measures taken to rectify conditions adverse to quality and, where necessary, to preclude repetition. (5)

#### **Criteria**

The rules or tests against which the quality of performance can be measured. They are most effective when expressed quantitatively. Fundamental criteria are contained in policies and objectives, as well as codes, standards, regulations, and recognized professional practices that DOE and DOE contractors are required to observe. (3)

# D

#### **Data**

Factual information, regardless of media and format, used as a basis for reasoning, discussion, or calculation. (5)

#### **Data Reduction**

Any and all processes that change either the form of expression or quantity of data values or numbers of data items. (5)

# D

#### **Data Validation**

The systematic effort to review data in order to ensure acceptable data quality. A systematic process for reviewing a body of data against a set of criteria to provide assurance that the data are adequate for their intended use. A systematic review process conducted to confirm the degree of truth in an analytical measurement. The process includes the review of all pertinent sample analysis and quality assurance/quality control (QA/QC) data compared to recognized standards or criteria. Data validation consists of data editing, screening, checking, auditing, verification, certification, and review. The "screening" process may be done by manual and/or computer methods, and it may use any consistent techniques, such as sample limits, to screen out impossible values or complicated acceptable relationships of the data with other data. (5)

#### **Distribution Charts**

Data are divided into categories of interest (e.g., root causes or reporting elements). It is then graphed as a stacked bar chart to compare the relative contribution of each category to the total. (1)

#### **Distribution Diagram**

A block diagram showing data in order of contribution to the total. The horizontal axis of the Distribution Diagram lists the most frequent item in the performance indicator population on the left and progresses in descending order to the least frequent item on the extreme right. The cumulative total of the items is reflected above the block at each interval. By structuring the data in this form, the Distribution Diagram provides a focus on the largest contributing items in each performance indicator. (1)

# G

#### **Goal**

The result that a program or organization aims to accomplish. (2)

Also, a statement of attainment/achievement, which is proposed to be accomplished or attained with an implication of sustained effort and energy. (3)

## APPENDIX A

### GLOSSARY OF TERMS

# G

#### Guideline

A suggested practice that is not mandatory in programs intended to comply with a standard. The word "should" or "may" denotes a guideline; the word "shall" or "must" denotes a requirement. (3)

# I

#### Item

An all-inclusive term used in place of the following; appurtenance, sample, assembly, component, equipment, material, module, part, structure, subassembly, subsystem, unit, documented concepts, or data. (7,8)

# L

#### Lessons Learned

A summary intended for the beneficial use of the receiver, of conditions detected at any facility that may include techniques and actions employed to correct the condition. DOE Order 5000.3B suggests that facilities use the Occurrence Reporting and Processing System (ORPS) to identify good practices and lessons learned. (8)

A “good work practice” or innovative approach that is captured and shared to promote repeat application. A lesson learned may also be an adverse work practice or experience that is captured and shared to avoid recurrence. (11)

#### Limit Lines

Lines drawn on charts to provide guides for evaluation of performance. (1)

#### Line Manager

Includes all managers in the chain of command from the first-line supervisors to the top manager. (5)

# M

#### **Management**

All individuals directly responsible and accountable for planning, implementing, and assessing work activities. (5)

#### **Mean**

The arithmetic average of a set of numbers. (5)

#### **Measurement**

The quantitative parameter used to ascertain the degree of performance. (2)

#### **Metric**

Used synonymously with measurement. (2)

# O

#### **Objective**

A statement of the desired result to be achieved within a specified time. (3)

#### **Occurrence**

An unusual or unplanned event having programmatic significance such that it adversely affects or potentially affects the performance, reliability, or safety of a facility. (3)

#### **Outliers**

Data that fall outside the control lines. (1)

#### **Parameter**

A quantity that describes a statistical population or any of a set of physical properties whose values determine the characteristics or behavior of something. (13)

#### **Pareto Analysis**

A type of analysis (also known as “distribution diagram”) that focuses attention on areas that have the most influence on the total, facilitating the assignment of resources in order to prioritize improvement efforts. (1)

#### **Performance Based**

Being associated with the outcome rather than the process. (2)

#### **Performance Goal**

The target level of outcomes expressed as a tangible, measurable objective against which actual achievement can be compared. (2)

#### **Performance Indicator(s)**

A parameter useful for determining the degree to which an organization has achieved its goals. (2)

Also, a quantifiable expression used to observe and track the status of a process. (3)

Also, the operational information that is indicative of the performance or condition of a facility, group of facilities, or site. (6)

#### **Performance Measure(s)**

Encompassing the quantitative basis by which objectives are established and performance is assessed and gauged. Includes performance objectives and criteria (POCs), performance indicators, and any other means that evaluate the success in achieving a specified goal. (3)

Also, the quantitative results used to gauge the degree to which an organization has achieved its goals. (2)



# P

#### **Performance Objectives and Criteria (POC)**

The quantifiable goals and the basis by which the degree of success in achieving these goals is established. (3)

#### **Periodicity**

Data that show the same pattern of change over time, frequently seen in cyclical data. (1)

# Q

#### **Quality**

A degree to which a product or service meets customer requirements and expectations. (9)

#### **Quality**

Actions that provide confidence that quality is achieved. (9)

#### **Quality Management**

The management of a process to maximize customer satisfaction at the lowest cost. (2)

# R

#### **Root Cause**

The basic reasons for conditions adverse to quality that, if corrected, will prevent occurrence or recurrence. (3)

#### **Root Cause Analysis**

An analysis performed to determine the cause of part, system, and component failures. (10)

# R

#### Runs

Series of data points above or below the central line. A “run” of seven consecutive points or 10 out of 11 points indicates an abnormality. (1)

# S

#### Self-Assessment

A systematic evaluation of an organization's performance, with the objectives of finding opportunities for improvement and exceptional practices; normally performed by the people involved in the activity, but may also be performed by others within the organization with an arms-length relationship to the work processes. (2)

#### Senior Management

The manager or managers responsible for mission accomplishment and overall operations. For DOE, DOE Cognizant Secretarial Office, and Field/Operations Office Managers are responsible for mission accomplishment and overall operations. For DOE management and operating (M&O) contractors, the General Manager, or similar top position is responsible for mission accomplishment and overall performance in accordance with the requirements of their contracts or other agreements. (9)

A continuous process of comparing performance with desired objectives to identify opportunities for improvement. Assessments are conducted by individuals, groups, or organizations relating to their own work. (3)

#### Site

The area comprising or within a DOE laboratory or complex with one or more DOE facilities.

#### Situation Analysis

The assessment of trends, strengths, weaknesses, opportunities, and threats, giving a picture of the organization's internal and external environment to determine the opportunities or obstacles to achieving organizational goals; performed in preparation for strategic planning efforts. (2)

# S

#### **Special Cause of Variation**

Also known as assignable causes of variation. A cause that is specific to a group of workers, a particular worker, a specific machine, or a specific local condition. Examples are water in a gasoline tank or poor spark plugs. (12)

#### **Stakeholder**

Any group or individual who is affected by or who can affect the future of an organization—customers, employees, suppliers, owners, other agencies, Congress, and critics. (2)

#### **Standard Deviation**

A statistic used as a measure of the dispersion in a distribution, the square root of the arithmetic average of the squares of the deviations from the mean. (5)

#### **Strategic Planning**

A process for helping an organization envision what it hopes to accomplish in the future, identify and understand obstacles and opportunities that affect the organization's ability to achieve that vision, and set forth the plan of activities and resource use that will best enable the achievement of the goals and objectives. (2)

#### **Surveillance**

An act of monitoring or observing a process or activity to verify conformance to specified requirements.

# T

#### **Task**

A well-defined unit of work having an identifiable beginning and end that is a measurable component of the duties and responsibilities of a specific job.

#### **Top Down**

To start with the highest level of management in an organization and propagating through successively lower levels of the organization. (2)

#### **Total Quality Management (TQM)**

A management philosophy that involves everyone in an organization in controlling and continuously improving how work is done in order to meet customer expectations of quality. (2)

Also, the management practice of continuous improvement in quality that relies on active participation of both management and employees using analytical tools and teamwork. (4)

#### **Trend Analysis**

A statistical methodology used to detect net changes or trends in levels over time. (5)

An analysis of parts, systems, component surveillances, performance, and operating histories to determine such things as failure causes, operational effectiveness, cost-effectiveness, and other attributes. (10)

Continual rise or fall of data points. If seven data points rise or fall continuously, an abnormality is considered to exist. (1)

# U

## U-Chart

Also referred to as “rate” charts, deal with event counts when the area of opportunity is not constant during each period. The steps to follow for constructing a u-chart are the same as a c-chart, except that the control limits are computed for each individual time period since the number of standards varies. (1)

## Unit of Measure

A defined amount of some quality feature that permits evaluation of that feature in numbers. (4)

# V

## Validation

A determination that an improvement action is functioning as designed and has eliminated the specific issue for which it was designed. (4)

Also, to determine or test the truth or accuracy by comparison or reference. (5)

## Verification

A determination that an improvement action has been implemented as designed. (4)

Also, the process of evaluating hardware, software, data, or information to ensure compliance with stated requirements. The act of reviewing, inspecting, testing, checking, auditing, or otherwise determining and documenting whether items, processes, services, or documents conform to specified requirements. (5)

## Vertical Axis Scaling

The following general criteria should be applied to the depiction of trend data on control charts: (1) scale should be set so that the chart can be quickly understood, and (2) data together with the limit lines should span at least half of the vertical axis. (1)

# W

## Work

A process of performing a defined task or activity; e.g., research and development, operations, maintenance and repair, administration, software development and use. (5)

Also, the process of performing a defined task or activity, for example, research and development, operations, maintenance and repair, administration, software development and use, inspection, safeguards and security, data collection, and analysis. (9)

# X

## X-Chart

Involve the analysis of individual measured quantities for indications of process control or unusual variation. The standard deviation for x-charts (also referred to as individual charts) is calculated using a moving range. (1)

## References

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## **APPENDIX A**

### **GLOSSARY OF TERMS**